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## NMRC Researchers Recap Liberia Deployment during Seminar

Story by Mikelle D. Smith, Naval Medical Research Center Public Affairs



Naval Medical Research Center (NMRC) personnel who deployed to Liberia in support of Operation United Assistance. Pictured (left to right), Lt. Cmdr. Benjamin Espinosa, Lt. James Regeimbal, Lt. Josue Garcia, Cmdr. Guillermo Pimentel, Lt. Andrea McCoy, Cmdr. David Brett-Major, Lt. Christina Farris, Hospital Corpsman Chief Jerrold Diederich and Cmdr. James Lawler. (Photo taken by Mikelle D. Smith, Naval Medical Research Center Public Affairs)

SILVER SPRING, Md. - Naval Medical Research Center's (NMRC) Infectious Diseases Directorate (IDD) held a seminar, May 29, recognizing the researchers' for the exceptional work they performed as part of the deployed teams that aided in the eventual Ebola-free status of the African country of Liberia.

The panel of NMRC researchers included BDRD, Deputy Director, Cmdr. Guillermo Pimentel; Office

of Emerging Infectious Diseases and Global Health Security, Cmdr. David Brett-Major; Biological Defense Research Directorate (BDRD) Clinical Research Department Head, Cmdr. James Lawler; BDRD Department Head Operations, Lt. Cmdr. Benjamin Espinosa; and, Investigator in Viral and Rickettsial Diseases Department, Lt. Christina Farris.

Last year, NMRC researchers played

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## NMRC Commanding Officer Message



This is the season of transitions. People all over the NMR&D Enterprise are executing orders. Many are moving from one research command to another, such as LCDR Prouty moving from NAMRU-2 to NMRC and Lt. Cmdr. Soutiere moving from NSMRL to NHRC. Some are moving to operational, clinical, or professional exchange billets, such as Lt. Rocha from NSMRL to Quantico or Capt. Dave Regis from NMRC to the UK. And some are retiring or leaving the service such as HM1 Knetsch retiring out of NAMRU-SA, HM1 Malloy, Chief Diederich, and Capt. Savarino retiring out of NMRC, and HM3 Cho from NMRC leaving to return to the University of California and Lt. Couturiere from NSMRL off to start a residency at Yale. We are also seeing people step into new positions of leadership throughout the enterprise. Capt. Eric Hall is now the XO at NMRC. Capt. Tom Herzig has moved from NHRC and is now the XO at NSMRL. Cmdr. Billy Pimentel is moving from NMRC to become the XO of NAMRU-6. And of course, we have recently had changes of command at NSMRL, in which Capt. Fred Yeo relieved Capt. Steve Wechsler, and at NAMRU-SA where Capt. Elizabeth Montcalm-Smith relieved Capt. Rita Simmons. We will soon have changes of command at NHRC (Capt. Simmons to relieve Capt. Rychnovsky), NAMRU-6 (Capt. Armstrong to relieve Capt. Petersen), and NAMRU-2 (Capt. Wheeler to assume command from Capt. Monteville) as well. These transitions are always stressful but they contribute to the strength of our system, one in which great people can come in and be productive, help move us to our shared mission goals, better their personal careers, and then move on to their next challenge. I'd like to thank all those personnel who are making moves over the next few months, most of whom I have not named, for their exceptional work and significant contribution to our enterprise and mission. On a personal note, this is my time to transition as well. Capt. Jacque Rychnovsky will be relieving me as the Commanding Officer of NMRC, July 17 and I will be retiring from the Navy.

I am grateful to have served with the men and women of the Naval Medical Research and Development Enterprise. Your dedication to our noble mission has been inspiring and I will cherish my memories of working with you forever. It has been an honor.

NMRC Commanding Officer sends,  
John. W. Sanders III, CAPT, MC, USN

## NHRC Commanding Officer Message

When I arrived at NHRC, the political climate was one of the most challenging in government history. We were in the middle of a furlough where our civil service shipmates were working condensed schedules, and a complete government shutdown was impending. Taking the helm of a command I knew was efficiently run but lean, I was preparing to support our team by talking to our research and development sponsors and collaborators about delays in projects or reports inevitably brought on by the furlough. But I was astonished. NHRC didn't have a single delay. In fact, during my time at NHRC, our team executed unprecedented research and development that encompasses a wide spectrum of subject matter unique to this command. Our Millennium Cohort team enrolled its 200,000<sup>th</sup> participant and remains the largest, longitudinal study in military history. Our team established the Consortium for the Health and Readiness of Servicewomen (CHARS), with the goal of becoming the premier research organization supporting the readiness of servicewomen. Our medical modeling and simulation team worked tirelessly on developing the Expeditionary Medical Encounter Database (EMED), and even more impressive, created a program the DoD officially designated as a program of record. Our operational infectious diseases team closed out the largest FDA-regulated safety study in NHRC's history. And our DoD's HIV/AIDS Prevention Program (DHAPP) team seamlessly transitioned to the third phase of the President's Emergency Plan for AIDS Relief (PEPFAR) program, which we all know is the largest international health program focusing on a single disease in U.S. history. All of these accomplishments are a testament to the teamwork, collaboration, and value that NHRC brings to the table. A team of subject matter experts, all dedicated to our service men, women, and their families with the goals of not only improving force readiness, but to simply make their lives better; a team who knows how to expertly use science as a means of informing policy and practice, and promoting evidence-based decisions; a team that I am grateful to have led and look forward to supporting in my new role as the enterprise commander.



Thank you, NHRC, for a wonderful and memorable two years. I look forward to our continued work together.

NHRC Commanding Officer Sends,  
Jacqueline D. Rychnovsky, CAPT, NC, USN



(continued from page 1)

an integral role in the interagency response, Operation United Assistance, to help fight the West African Ebola epidemic in Liberia. Two teams were deployed to Bong County, Liberia, and the capital city of Monrovia, where they set up two mobile laboratories.

“The BDRD laboratories provided PCR [Polymerase Chain Reaction-based] diagnostics so they could rapidly identify potential infections to assist in clinical care,” said NMRC IDD Director, Dr. Kevin Porter. “In addition to laboratory support we had two of our Navy infectious diseases physicians participate in other global efforts and U.S. preparedness. They also trained other healthcare professionals that were involved in helping to contain the epidemic in Liberia and other countries.”

Panel members gave a quick synopsis of the effective strategies executed by NMRC and other supporting commands to get the mobile laboratories quickly set up and functioning efficiently. Individuals attending the seminar also had the opportunity to participate during a question and answer session.

When asked about the mobile labs participation in the Ebola epidemic, Pimentel said, “I have been involved in five [different] outbreaks and this one was the most challenging one, but also the most rewarding one.

At the very end of this NMRC labs had processed more than 5,300 samples of Ebola which is impressive.



The panel of Naval Medical Research Center (NMRC) researchers speaking at the seminar: Pictured (left to right) Biological Research Diseases Directorate (BDRD), Department Head Operations, Lt. Cmdr. Benjamin Espinosa; BDRD, Deputy Director, Cmdr. Guillermo Pimentel; Office of Emerging Infectious Diseases and Global Health Security, Cmdr. David Brett-Major; Biological Defense Research Directorate (BDRD) Clinical Research Department Head, Cmdr. James Lawler; and, Investigator in Viral and Rickettsial Diseases Department, Lt. Christina Farris. (Photo taken by Mikelle D. Smith, Naval Medical Research Center Public Affairs)

We are mobile, fast and deployable, which makes us an asset like no other in situations like this ... I truly believe that we were a game-changer during this outbreak.”

BDRD serves as a national resource providing testing and confirmatory analysis for the presence of infectious diseases including select agents and other potential biological hazards. Its portable laboratories are devoted to detecting and confirming biological agents in any environment. It has become a leader in the field of detection and production of hand-held molecular diagnostics, and immunological assays.

IDD conducts research on infectious diseases that are considered to be significant threats to deployed

Sailors, Marines, Soldiers, and Airmen. Significant threats are those that have the potential to incapacitate a large number of deployed forces over a short time period.

The geographical distribution of a disease; the lack of an effective vaccine, treatment, or other control measures; the mode of transmission; and the historical impact during past wars are all factors that determine the importance of an infectious disease to the Department of Defense.

NMRC is a premier research organization with a vision: world-class, operationally-relevant health and medical research solutions.

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Graphic illustration by Mikelle D. Smith, Naval Medical Research Center Public Affairs

# Naval Medical Research Unit-San Antonio

## Change of Command

Story by Flisa Stevenson, Naval Medical Research Unit-San Antonio, Public Affairs

SAN ANTONIO -- With the traditional exchange of salutes, Capt. Rita G. Simmons, commanding officer, Naval Medical Research Unit-San Antonio (NAMRU-SA) turned over command of NAMRU-SA to Capt. Elizabeth Montcalm-Smith during the time-honored Navy tradition of a change of command ceremony conducted at the Fort Sam Houston Theater, Joint Base San Antonio, Fort Sam Houston in San Antonio, June 5.

Naval Medical Research Center (NMRC) Commanding Officer, Capt. John W. Sanders, presided over the ceremony and Commander of Navy Medicine Education and Training Command, Rear Adm. Rebecca J. McCormick-Boyle, served as the guest speaker.

The ceremony marked the end of a very successful 34-month command tour focused on the command reorganization for two research facilities valued at 70 million dollars. Simmons directly led the organization and development of all management and research processes for a relatively new command.

When Simmons arrived at NAMRU-SA three years ago, the command had only been fully operational for a year and a half. Her remarks reflected back to that time with warmth and humor as she recounted the uncertain challenge of setting a high bar for all to emulate, and then asking the staff to *believe* they could and would accomplish their new goals.

"I just need you to hit the 'I believe button,'" said Simmons.

This statement became so



*Naval Medical Research Unit-San Antonio was passed to a new commanding officer at a change of command ceremony conducted with great dignity and steeped in U.S. Navy military tradition, at Joint Base San Antonio, Fort Sam Houston in San Antonio, June 5. (Photo courtesy of NAMRU-SA Public Affairs)*

synonymous with Simmons and her leadership that it inspired a NAMRU-SA staff member to give her a push button with the word 'believe' stenciled on top.

"I believed in their abilities," said Simmons. "I wanted them to believe also and they did!"

Highlights of her tour included developing a clear strategic plan that fostered collaborations between local and enterprise laboratories, meticulously restructured and led two directorates and nine departments resulting in cost savings of 10 million dollars and completion of three proposals for multi-year funding, publication of 42 technical reports, 30 manuscripts, and six provisional patents.

Simmons also successfully led the command through three major inspections, initiated the Oak Ridge

Institute for Science and Education Post-doctoral Fellowship Program, and hosted the U.S. Navy's 239<sup>th</sup> birthday celebration in San Antonio.

Simmons extended special thanks to the NAMRU-SA scientists, science staff and support staff.

"Thank you for believing in yourselves, one another, and for doing what we often thought was impossible," said Simmons.

Simmons had the believe button sitting on her desk the entire tour. Every time someone would waiver or the odds seemed too great, she would wave her hand over the believe button and they would smile and press on.

In her congratulations to Capt. Montcalm-Smith, Simmons spoke with great conviction that the staff

*(continued on page 10)*



# NSMRL Commanding Officer Turns Over Leadership during Change of Command Ceremony

Story courtesy of NSMRL Public Affairs

GROTON, Conn. –Naval Submarine Medical Research Laboratory (NSMRL) held a change of command ceremony at the historic ship Nautilus, Naval Submarine Force Museum, Naval Submarine Base New London, where Commanding Officer, Capt. Steven Wechsler was relieved by Executive Officer Capt. Frederick Yeo, May 26.

Wechsler welcomed and thanked everyone for attending the ceremony and introduced the first speaker, Congressman Joe Courtney. Courtney represents the second congressional district of Connecticut in the House of Representatives. During his remarks Courtney highlighted some of the amazing work being performed by researchers at NSMRL.

Next, Wechsler introduced the principal guest speaker, Director, Naval Warfare Integration Division, OPNAV N91, Rear Admiral Rick Breckenridge. Wechsler and Breckenridge were classmates at the U.S. Naval Academy and May 26 marked the 33<sup>rd</sup> anniversary of their graduation in 1982.

During his speech, Breckenridge recognized NSMRL as the hidden “behind-the-scenes” Crown Jewels of our Undersea Force.

“Undersea dominance is a team sport that extends far beyond those that prowl from the deep,” said Breckenridge. “Today’s submarine Sailors are strongly supported by a dedicated team that makes sacrifices and contributions that are just as important to our ‘near-total’ dominance in this domain. I want to praise the leadership of a great American who has revitalized the mission and relevance of medical



Naval Medical Research Center Commanding Officer, Capt. John W. Sanders gives an award to Naval Submarine Medical Research Laboratory (NSMRL) Commanding Officer Capt. Steven Wechsler during a change of command ceremony held at the historic ship Nautilus, Naval Submarine Force Museum, Naval Submarine Base New London. Wechsler was relieved by NSMRL Executive Officer Frederick Yeo. (Photo courtesy of NSMRL Public Affairs)

research to today’s undersea warfighter.”

Naval Medical Research Center (NMRC) Commanding Officer, Capt. John W. Sanders, applauded Wechsler for his leadership, guidance and uncompromising pursuit of excellence. Additionally, Sanders said Wechsler’s attributions resulted in numerous outcomes that substantially improved NSMRL and Navy Medicine, while also contributing to improved health onboard submarines.

“Captain Wechsler truly deserves this and has my strongest recommendation,” said Sanders.

Following remarks from Breckenridge and Sanders, Wechsler thanked the military members, government civilians and contract staff of NSMRL.

“Together we faced some challenges, but we weathered the storm,” said Wechsler. “We transitioned actionable research directly to the fleet. [We

made] improvements and changed the lives of submariners worldwide -- be it through considerations of human factors in equipment design and operations, through advances in physiological, psychological, or medical knowledge. We pushed these solutions out to the fleet as soon as reasonably ready for operational implementation. We provided the science and the submarine fleet derived the policies and procedures based on our science.”

“My last remarks are for my crew,” said Wechsler. “It has been an extreme honor and pleasure to serve as your commanding officer. I wish each and every one of you success in all your future endeavors. I won’t be far away, but I will miss you and the lab, dearly.”

After his remarks, Wechsler introduced Capt. Yeo as the new Commanding Officer of NSMRL. Yeo is an expert undersea medical officer, a

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# NAMRU-D Researcher Delivers Ames Lecture at Aerospace Physiology Society Annual Meeting

Story courtesy of NAMRU-D Public Affairs

DAYTON, Ohio – A researcher working at the Naval Medical Research Unit Dayton (NAMRU-D) had the opportunity to deliver the prestigious Smith W. Ames Lecture at the 50<sup>th</sup> annual meeting of the Aerospace Physiology Society (AsPS), May 13, Orlando, Florida.

Dr. William Albery provided a talk on the career of Smith W. Ames, the namesake for the lecture series. Albery is a 30-year member of the Aerospace Medical Association (AsMA) and the AsPS. His more than twenty years of acceleration research at the Air Force Research Laboratory at Wright-Patterson AFB included studies in spatial disorientation and helicopter maneuvering performance in degraded visual environments. He currently works at NAMRU-D where he serves as a senior biomedical engineer participating in the installation and testing for the Disorientation Research Device (DRD), a 50-ton centrifuge-like device.

Albery's presentation, "Cobwebs in an Aero Med Lab Attic" included a retrospective look at Smith Ames' career, focusing on the role Ames played in establishing aerospace physiology programs in the Air Force. "It was an honor to give the Smith W. Ames lecture," Albery said. "Ames [was] considered the father of Air Force aerospace physiology. He passed away in 1979."

Albery also provided an extensive account of human acceleration research in the Air Force, in particular his own activities during the 25 years he was in charge of the USAF Dynamic Environment Simulator centrifuge at Wright-Patterson AFB.

Albery concluded with an overview of NAMRU-D's DRD, a dynamic six-axis of motion human acceleration research device, under construction at NAMRU-D and scheduled for completion this summer. The DRD will be used for basic applied spatial disorientation research, uniquely suited for creating authentic motion for investigation multi-sensor



*Dr. Bill Albery pictured with the Paul Bert statue he received in 2004 when he accepted the Paul Bert Award for Physiological Research. Dr. Albery delivered the 2015 Smith W. Ames Lecture during this year's Aerospace Physiology Society of the Aerospace Medical Association Annual Luncheon. (Photo courtesy of NAMRU-Dayton Public Affairs)*

perceptual illusions and developing countermeasures.

"Working with NAMRU-D on the DRD is a dream come true. I retired from Civil Service here at Wright-Patterson AFB in 2008 after 36 years as a scientist and researcher in the areas of acceleration and spatial disorientation countermeasures. I consider it a privilege to work with the outstanding scientists and engineers of NAMRU-D who are performing the acceptance tests on the DRD," Albery said when asked to describe being a part of the NAMRU-D DRD team. This unique device will ensure NAMRU-D researchers remain at the forefront of aerospace physiology research for years to come.

AsPS is a constituent organization of the

Aerospace Medical Association (AsMA), and since 1966 has served the professional needs of members working in the field of aerospace and operational physiology. Among the professional support activities is the board certification program in aerospace physiology. NAMRU-D researchers have been active in the society over the years.

This year's annual meeting was held, in conjunction with the main AsMA conference. Cmdr. Rich Folga, head of Acceleration and Sensory Sciences at NAMRU-D, served as AsPS president during 2014-2015



# NAMRU-SA Demonstrates the Detection and Identification of Bacteria Extracted from Human Serum

Blog by Christian Kotanen, Ph.D., Postdoctoral Fellow, NAMRU-SA



NAMRU-SA Bioengineer and Postdoctoral Fellow, Christian N. Kotanen, Ph.D., is holding a battery powered, hand-held Raman spectrometer that can display biomolecular "fingerprints" of an infectious pathogen in less than a minute. (Photo by Flisa Stevenson, NAMRU-SA Public Affairs)

**SAN ANTONIO** - The rate of infectious complications in the U. S. military is approximately 35 percent for combat casualties. Early diagnosis of bacterial agents in the field is critical for the survival and care of wounded warfighters. Advances in diagnostic capabilities that are well suited to field conditions can aid in prevention of infectious complications.

Scientists at the Naval Medical Research Unit - San Antonio (NAMRU-SA) are investigating novel techniques and platforms for rapid and effective infectious pathogen diagnosis.

One such technique, known as surface enhanced Raman scattering (SERS) spectroscopy, has the ability to generate unique spectral biomolecular "fingerprints" of microbes such as

bacteria and viruses.

My expertise is in the design and implementation of biosensors. I have found this technology to be quite versatile and may be applied to more than just bacterial detection. I gave a presentation about SERS and the military relevance of biosensors at a U. S. Army Institute for Surgical Research scientific seminar on Joint Base San Antonio, Fort Sam Houston, Texas, March 11.

Ultimately we would like to see a fully functional biosensor system deployed and actually have an impact on improving trauma-related outcomes. NAMRU-SA scientists recently demonstrated that the SERS device was able to identify five bacterial species of military interest from pure culture and

bacteria recovered from human serum using a NAMRU-SA designed lysis filtration procedure.

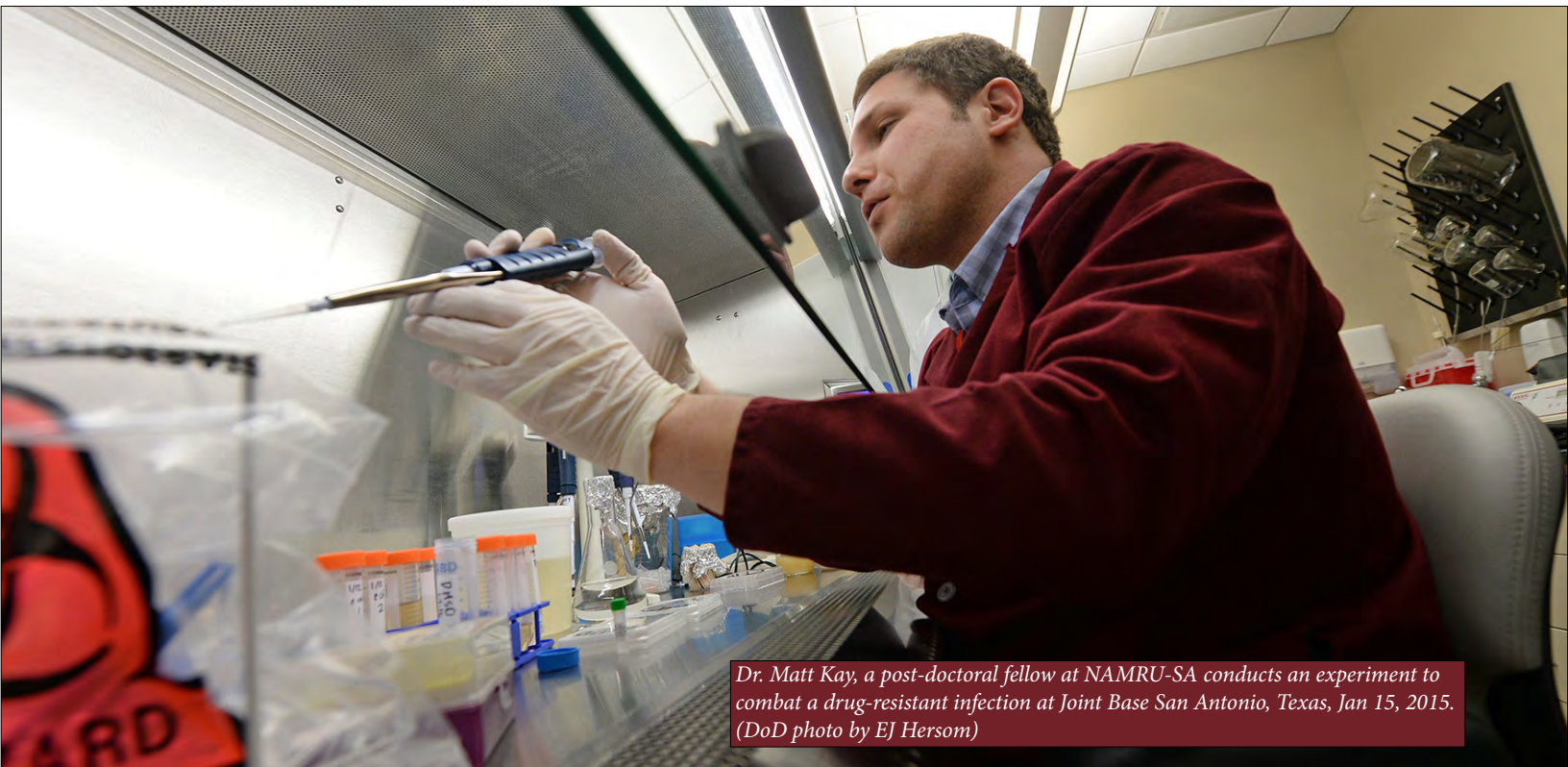
The spectra of each bacterial species represent shifts in the frequency of monochromatic (fixed frequency) light caused by the biological structures of the bacterial cell wall. Hydrophilic bacterial species of *Staphylococcus aureus* and *Acinetobacter baumannii* were easily detected and identified from serum samples without significant changes occurring to their spectra due to sample processing. Shifts in relative peak intensities of SERS spectra were observed primarily for hydrophobic bacterial species of *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, and *Escherichia coli*. Using this technique, libraries of bacterial SERS spectra can be prepared in advance to generate reference criteria for identification of several bacterial species and strains from blood and tissue samples.

The SERS biosensor can also aid caregivers in administering appropriate antibiotic treatments. After successful identification of an infecting microbe, drug resistance can be assessed by observing shifts in SERS peak intensity after incubation on antibiotic coated nanoparticles.

Preliminary studies at NAMRU-SA have shown mixtures of Gram-negative and Gram-positive bacterial species can be differentiated from either species alone. Improvements to the methods of separation for sample preparation to increase bacterial extraction yields and reduce component requirements are currently underway.

# Navy Craniofacial Health and Restorative Medicine Researchers' Work Helps Wounded Warriors

Story by Shannon Collins DoD News, Defense Media Activity



*Dr. Matt Kay, a post-doctoral fellow at NAMRU-SA conducts an experiment to combat a drug-resistant infection at Joint Base San Antonio, Texas, Jan 15, 2015. (DoD photo by EJ Hersom)*

WASHINGTON - Naval Medical Research Unit-San Antonio's (NAMRU-SA) interdisciplinary teams of biomedical engineers, environmental microbiologists, dentists, chemists and other researchers conduct research to help Sailors and Marines. NAMRU-SA's mission is to conduct medical, craniofacial and biomedical research to enhance the health, safety, performance and operational readiness of Navy and Marine Corps personnel and addresses emergent medical and dental problems in routine and combat operations.

NAMRU-SA's Craniofacial Health and Restorative Medicine Directorate team focuses on research to re-engineer wound healing, infection control and dental treatments.

"The research here encompasses everything above the shoulders," said Capt. Rita Simmons, NAMRU-SA's commanding officer. "And the most common injuries now -- with body armor being so effective -- we're looking at wounds in the head and face area. That area of research has really moved to the

forefront of our wounded warrior issues."

## Cranial Implants

Researchers are working on redesigning the surface of titanium implants and developing nano-delivery systems for antimicrobials and local anesthetics for controlling pain and infection after a burn or head injury. A patient who has a traumatic head injury may suffer the loss of portions of their skull or could have an elevation of intracranial pressure requiring the surgical removal of a portion of the skull to relieve pressure from excess fluid build-up.

Replacing the skull bone often requires an implant. These implants are typically made of durable polymers or titanium. Patients who go through this surgery have a high rate of post-surgical infections, which may necessitate removal and replacement of the implant.

"Obviously, through any type of force, whether it's some sort of blunt force trauma or blast injury to the head, quite often, the skull will be damaged during that process,"

Simmons said. "But there are ways to improve the cranial implants used as part of the recovery process and ways we can help fight infection. We don't make the implants here but we investigate new surface materials to improve the implant's function and reduce the rates of infection that can directly improve quality of life outcomes after the injury."

## Wound Dressing

Wound dressings used on the battlefield are traditional bandages, officials said. They help control hemorrhage but do not actively help in the healing process.

Researchers are looking into creating bandages with bioactive factors such as growth factors, antibiotics and other agents that may speed up healing and reduce scar formation, said Capt. Jonathan Stahl, a research dentist.

Researchers have built an electrospinning device to make dressings using nanofiber

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# NMRC and Army Working Together in Research

Story by Mikelle D. Smith, Naval Medical Research Center Public Affairs

SILVER SPRING, Md. -- Scientists at Naval Medical Research Center (NMRC) rely heavily on the expertise of one Army officer and her dedicated team of Soldiers to aide in efficiently and effectively moving forth with a variety of research efforts.

Lt. Col. Julie Stephens-DeValle, an Army veterinarian working for NMRC as a Laboratory Animal Veterinarian, in many ways holds the key to the majority of studies conducted by principle investigators.

"The Army is the only service that has active veterinarians that work in a clinical role," said Stephens-DeValle. "My role as a laboratory animal veterinarian for NMRC is to provide guidance and to ensure humane research is done. When the investigators do their research they need to have a consulting veterinarian and that is my job. One of the requirements is that a veterinarian, trained in laboratory animal medicine, must review all protocols."

Stephens-DeValle maintains a team of Soldiers who work directly for NMRC, but spend their days working with other Soldiers assigned to the Veterinary Services Program at Walter Reed Army Institute of Research (WRAIR).

"The Soldiers that work for NMRC are embedded into the veterinary services program and they rotate through each area to gain experience throughout the specializations," said Stephens-DeValle. "They provide protocol support on a daily basis working with a PI [Principle Investigator] who needs certain procedures done and they make sure that happens, while monitoring and making sure the animals are healthy and steady."

Each Soldier, professionally known as Animal Care Specialists, is highly-versed in the proper procedures for handling, caring and maintaining all animals in the most humane manner possible. They attend 10 weeks of Basic Combat Training and 11 weeks of Advanced Individual Training, including practice in animal care. The animal care specialist is primarily responsible for the prevention and control



*Soldiers assigned to Naval Medical Research Center (NMRC) work for Lt. Col. Julie Stephens-DeValle (far right) as Animal Care Specialists. Each Soldier is highly-versed in the proper procedures for handling, caring and maintaining animals humanely in laboratory settings. (Photo taken by Mikelle D. Smith, Naval Medical Research Center Public Affairs)*

of diseases transmitted from animal to man, as well as the comprehensive care for government-owned animals. Some of their skillsets include providing routine daily care for animals in veterinary treatment or research and development facilities; performing physical examinations to detect obvious abnormalities and reports findings to veterinarians; calculating doses and administering oral and topical medications as directed by the veterinarians; and, assisting veterinarians in surgical procedures.

"We are advocates for the animals," said Stephens-DeValle. "Every protocol that comes across my desk is intensely reviewed to make sure there is a significant need. There must not be any duplication, no alternatives to using an animal and there must be military relevance. They must follow numerous regulations and guidelines, not just DoD [Department of Defense], but also civilian regulations. At my level I want all questions to be answered and all personnel to be satisfied."

Every three years Stephens-DeValle, along with WRAIR veterinary service program, are required to maintain good status

with the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) International.

"All DoD facilities that have animals need to be AAALAC accredited," said Stephens-DeValle. "Institutes go to AAALAC and ask them to assess them. They come and review the programs, review the facilities, evaluate our standards for using animals, to make sure all performance standards are met."

Stephens-DeValle stressed the importance of joint collaborations between NMRC and WRAIR.

"When I first got to NMRC it was sort of a culture shock," said Stephens-DeValle. "I think that the Army and Navy work well together and it helps to have an NMRC veterinarian working because it creates an environment of trust between the services. I can call up veterinarians on the WRAIR side and speak on behalf of NMRC because they know me, they know my work ethic and how serious I am about making sure these animals are taken care of ... that truly makes a difference in moving forward."



## Naval Medical Research Unit-San Antonio Change of Command

(continued from page 4)

of NAMRU-SA could not be more fortunate than to have Montcalm-Smith take the helm.

Simmons' next tour will be as Commanding Officer of the Naval Health Research Center in San Diego.

Montcalm-Smith most recently served as the Executive Officer at the Naval Medical Research Center (NMRC) in Silver Spring, Maryland.

"It is truly an honor to take command of NAMRU-SA," said Montcalm-Smith. "I have thoroughly enjoyed working with this dynamic research unit as the NMRC executive officer and I look forward to the exciting times ahead."

The occasion also served as Simmons' award ceremony. She was honored with the Legion of Merit Award from the President of the United States for her "exceptionally meritorious conduct in the performance of outstanding service

while serving as Commanding Officer, Naval Medical Research Unit San Antonio."

The mission of NAMRU-SA is to conduct medical, craniofacial, and biomedical research, which focuses on ways to enhance the health, safety, performance, and operational readiness of Navy and Marine Corps personnel and addresses their emergent medical and oral/facial problems in routine and combat operations.

June 17th, 2015 marks the 117th birthday of the Hospital Corpsman (HM) rating. Naval Medical Research Center wishes all HMs Happy Birthday!

## NAVY HOSPITAL CORPSMAN



Designed by Mikelle D. Smith  
Naval Medical Research Center Public Affairs



## R&D Chronicles

# The Curious Story of Navy Medicine and the Fight Against Rheumatic Fever Part II

By Andre B. Sobosinski, Historian, Bureau of Medicine and Surgery

"[The] capacity of 500 beds is estimated to be inadequate for the purpose intended during the next nine to twelve months, but ultimately it will be too small for the anticipated number of patients suffering from acute rheumatic fever. The duration of stay of such patients is considerably longer than the average stay of all patients in United States Naval Hospitals."

~~Frank Hines, Chairman of Federal Board of Hospitalization, December 1944

As a result of the increased demand for hospitalization and treatment of rheumatic fever, and support by and influence of powerful Georgia Representative, and the Chairman of the Naval Affairs Committee, Carl Vinson, the Navy constructed the newest hospital on the outskirts of Dublin, Georgia, in 1944.

Located on 232 acres, "Naval Hospital Dublin" could accommodate up to 900 patients at its peak and offered many of the "modern" services then available at naval hospitals at the time. One

of Dublin's characteristics (and chief complaints by personnel stationed there) was its isolation.

The closest "big" city, Macon, was located 55 miles away. The local train from Macon, which would breeze through Dublin once daily, and intermittent commercial bus service did little to make the hospital feel any less isolated from the rest of the world.

Most patients arrived via a four-engine R4D or R5D which landed in an airfield situated 2.8 miles from the hospital.



Dr. James Paullin, Atlanta-based cardiologist and consultant to Naval Hospital Dublin and NAMRU-4. (Photo courtesy of the National Library of Medicine)

Unlike other naval hospitals in operation, Dublin was conjoined with a clinical research laboratory with the

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Naval Hospital Dublin, Ga. in 1944. (Photo courtesy of Bureau of Medicine and Surgery Archives)

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a solvent along with bioactive agents and spun into a wound dressing using electrical forces. The resulting wound dressing will release the growth factors and other drugs over time and can be tested to determine if they improve and possibly accelerate the wound healing process. If successful, the new dressing may speed up healing and reduce scars for those injured on the battlefield.

### Cracked Teeth

“Fractured teeth and restorations are the most commonly reported dental emergencies among military personnel,” said Cmdr. David Leal, acting director for the Craniofacial and Restorative Medicine Department directorate. “This can be a showstopper for them, and it can affect their work schedules. If they’re deployed, they may have to get sent back home so somebody can take care of the problem.”

Current methods for detection of enamel cracks provide limited information, Leal said. For example, trans-lumination uses a bright visible light, which scatters when reflected on enamel. The dentist can see the fracture but is unable to determine the depth or extent of it. X-rays are not very diagnostic unless the fracture is grossly displaced. Researchers designed the Optical Coherence Tomography, or OCT. It uses non-ionizing laser light for obtaining sub-surface images of translucent or opaque materials.

“Our team’s goal is to use OCT as a new tool to develop a predictive model that dentists can use chairside to quickly scan a tooth and help them to evaluate the severity of tooth cracks,” Leal said.

### Nano Technology in Fillings

Dr. Amber Nagy, an environmental microbiologist and biomedical scientist, said one of the projects they are working on is improving resin formulations used to treat cavities. When a patient has a cavity cleaned out, he or she may receive an amalgam filling or a filling with resin that is tooth colored so it is more aesthetically pleasing.

Nagy said the resin fillings will be modified to have nanoparticles in it, which can



Navy Cmdr. David Leal uses a computer-assisted tool that displays tooth cracks during a procedure at Naval Medical Research Unit-San Antonio at Joint Base San Antonio, Texas, Jan. 15, 2015. (DoD photo by EJ Hersom)

use visible light to activate antibacterial activity. The goal is to eventually issue each patient a toothbrush with a light emitting diode in the toothbrush head so the resin antibacterial process will be activated by the toothbrush.

“We want to prevent bacteria from attaching to the tooth because bacteria cause the decomposition of the tooth or the decay of the tooth in the first place,” Nagy said. “By adding nano particles to the resin and hitting it with a light, it will prevent the bacteria from binding which will help to reduce cavity formation.”

“This research isn’t possible without our interdisciplinary team,” she said. “We have an excellent, dedicated and diverse team working together to solve these problems to save lives out there in the field.”

Simmons said those interdisciplinary teams seek to address the problem by bringing together people with varying expertise to answer questions from many different approaches.

“Teams come together to come up with the best solution in the fastest means possible,” Simmons said. “Whether it’s a device, a capability or a scientific innovation that can be pushed forward, NAMRU-SA continues to make great progress in research that optimizes warfighter readiness and saves lives.”

Link to DoD story: <http://www.defense.gov/news/newsarticle.aspx?id=128843>



# The Curious Story of Navy Medicine and the Fight Against Rheumatic Fever Part II

(continued from page 11)

strict purpose of studying rheumatic fever. Although subject to administrative orders of the hospital, the laboratory would develop into an independent unit, eventually garnering distinction as Naval Medical Research Unit No. 4 (NAMRU-4), at least ostensibly. On August 8, 1946, Rear Adm. William Agnew, then acting Chief of BUMED, issued a memorandum to Navy Medical Corps Chiefs stating: "The research group and research facilities at Dublin may...be known as NAMRU-4, but the designation will be used only as a term of convenience on Medical Department correspondence without implying independence of the hospital command."

At its peak, NAMRU-4 comprised a staff of research director, assistant research director, a personnel/property officer, enlisted technicians, two secretaries, and a number of civilian-scientists working as virologists, bacteriologists, immunologists, histopathologists, microbiologists, physiologist, and chemichophysicologists.

At the end of 1945, the Dublin research unit embarked on its first major project:

a basic study of rheumatic state in post-streptococcal infections at the Naval Training Center in Great Lakes, Ill. Working in accordance with the Rockefeller Institute and BUMED, NAMRU-4 sent researchers to Great Lakes to screen recruits showing after effects of streptococcus infections (Project X-702A).

The project set out to study the bacteriology of the disease from infection to convalescence, and to collect information on clinical and sub-clinical rheumatic fever or carditis in 400 cases of scarlet fever. Despite both being in operation (in some form) since the end of 1944, the hospital was only placed in commission January 22, 1945 and the laboratory in May 1946.

The former ceremony featured remarks by Vice Adm. Ben Moreell (Chief, Civil Engineer Corp), Vice Adm. Ross McIntire (Surgeon General), Congressman Carl Vinson, music by both the Marine Corps and Army Bands and a special address by Atlanta-based heart specialist and physician to President Roosevelt, Dr. James E. Paullin. Paullin, then a civilian consultant to

Surgeon General McIntire, would take special interest in the development of the hospital and research unit.

The Navy's increased access to penicillin and massive demobilization following World War II helped reduce the need for a special rheumatic fever hospital and laboratory.

In 1947, the Naval Hospital Dublin was transferred to the Veterans Administration where it was scheduled to be converted into a neuropsychiatric hospital. Today the facility is still in operation and known as the Carl Vinson Veterans Affairs Medical Center.

When Naval Hospital Dublin closed down in 1947, NAMRU-4 relocated to the Naval Training Center, Great Lakes, Illinois, where it set forth on an ambitious course of investigating additional problems affecting Navy recruits—i.e., influenza, pneumonia, respiratory infections, the common cold, and Meningococcal Infections. The Research Unit was disestablished in 1974.

## NSMRL Commanding Officer Turns Over Leadership during Change of Command Ceremony

(continued from page 5)

seasoned researcher and has in-depth knowledge of all laboratory operations.

As Yeo assumed command of NSMRL he thanked all for taking part in this traditional naval ceremony, noting it could not have happened without the hardwork of many people, many working behind the scenes to make this day come together. He also thanked Wechsler for his leadership and guidance for the past three years.

"I would not be standing here if it wasn't for your mentorship, and I am deeply grateful," said Yeo regarding Wechsler. "I have really enjoyed getting to know you over the past three years and look forward to the future. The work you do affects the lives of Sailors and submariners, which is immeasurable and contributes to the security of America. I feel honored and privileged to have the opportunity to continue to work with you, and I thank you for all you do."

Prior to the departure of the official party and the boatswain piping the side boys, Yeo said, "Finally, I want to recognize my diver brothers and sisters for all the support over the years. Thanks and HOOYAH!"

The mission of NSMRL is to protect the health and enhance the performance of our war fighters through focused submarine, diving, and surface research solutions.

# U.S. Ambassador to Peru Cuts Ribbon to Open NAMRU-6 Modular Labs

Story by Lt. Cmdr. Craig A. Stoops, NAMRU-6 Public Affairs



*The Honorable Brian Nichols, U.S. Ambassador to Peru and Capt. Kyle Petersen, NAMRU-6 commanding officer, cut the ribbon inaugurating new modular laboratories to be used while the main research building is being renovated. (Photo courtesy of NAMRU-6 Public Affairs)*

LIMA, Peru –The Honorable Brian Nichols, United States Ambassador to Peru, visited the U.S. Naval Medical Research Unit No. 6 (NAMRU-6) to officially open two modular laboratories by cutting a ceremonial ribbon, May 29.

In addition to the ribbon cutting Ambassador Nichols met with the staff, presented staff awards, and thanked them for all of their cutting edge work to protect deployed U.S. warfighters, partner militaries, and local Peruvians.

NAMRU-6 is undergoing significant facility renovations of the main laboratory. As with any major construction project the renovations will greatly impact both laboratory and administrative operations.

Renovation will begin in FY16 and be done in stages and work in the main building laboratories will be interrupted for approximately six to nine months. To offset the disruption and continue operations, two, state of the art, modular labs, with a total of just over 1200 sq. ft. of lab space, were installed at the NAMRU-6 facility. The modular labs are currently

being outfitted with all the necessary laboratory equipment and will be fully operational sometime early in FY16.

“These modular labs are the first time Navy Medicine has utilized such a product,” said NAMRU-6 Commanding Officer, Capt. Kyle Petersen. “Within Navy Medicine if the use of these modular labs represent a successful swing space this provides an option for laboratory renovations elsewhere in the R&D enterprise laboratories.”

Petersen added, “These portable labs are amazing. NAMRU-6 is lucky to have them here, allowing us to maintain our mission during the renovations.”

Ambassador Nichols presented awards to 20 NAMRU-6 staff members. Petersen thanked Ambassador Nichols saying, “I am deeply grateful to Ambassador Nichols for taking time out of his busy schedule to recognize our employees. His steadfast support of our mission has strengthened our partnerships and research efforts in Peru substantially in the past year.”

Hosted by the Peruvian Navy and collocated at their flagship hospital in Lima, Peru; with detachments at the Naval Hospital in Iquitos, Peru; and in Puerto Maldonado, Peru, NAMRU-6 conducts research and surveillance on a wide range of infectious diseases of military and public health significance in the region.

NAMRU-6 partners with the Peruvian Ministries of Defense and Health and works closely with prestigious universities like Cayetano-Heredia and San Marcos. NAMRU-6 also has productive relationships with the Ministries of Defense and Health, universities and NGO's throughout Latin America as well as with U.S.AID, U.S.CDC, U.S.NIH, Pan American Health Organization, and a number of U.S. universities.

These partnerships are part of a robust research agenda that includes working in prevention strategies, clinical trials, immune- and molecular rapid diagnostics, epidemiology, and ecology as well as projects measuring the social and economic impact of infectious diseases.



# NMRC Participates in the 19<sup>th</sup> Spring Research Festival Held at Ft. Detrick

Story by Rebecca J. Lloyd, NMRC Biological Defense Research Directorate



Ms. Vicki Jensen, from the Department of Homeland Security National Biodefense Analysis and Countermeasures Center at Ft. Detrick, giving opening remarks for the Ebola Virus Mini Symposium (Photo taken by Richard Frederickson, NCI)

SILVER SPRING, Md. – Hosted by the National Interagency Confederation for Biological Research (NICBR), the 19<sup>th</sup> Annual Spring Research Festival was held at Fort Detrick, Maryland, May 4 -7.

This was the third year for NICBR to sponsor the event. Open to NICBR partners and invited guests, the festival included two seminar sessions, a Poster Blitz, poster sessions and other activities.

The NICBR partners include several agencies, most co-located at Fort Detrick, including Naval Medical Research Center, U. S. Army Medical Research and Materiel Command, National Institute of Allergy and Infectious Diseases, National Cancer Institute, U. S. Department of Agriculture, U.S. Department of Homeland Security, Centers for Disease Control and Prevention, and the U.S.

Food and Drug Administration.

The Spring Research Festival gives the Fort Detrick research community a unique opportunity to share their research and open a door to collaborations between partners on the installation. Maj. Gen. Brian Lein, Commanding General, U.S. Army Medical Research and Materiel Command and Ft. Detrick, opened the festival by introducing Dr. James Crowe, Director from the Vanderbilt Vaccine Center, who was the keynote speaker and talked about the genetic and structural basis for antibody mediated neutralization of viruses.

There were 140 poster presenters this year and more than 500 visitors had the chance to view the work being done at the laboratories.

The Naval Medical Research Center's (NMRC) had two presenters. Matthew Henry presented his poster on

“Assessing and Characterizing Novel Bacteriophage for the Treatment of *Acinetobacter baumannii* Infections.” Five novel bacteriophage were studied for their growth characteristics and abilities to treat *Acinetobacter baumannii* infected wounds on a laboratory model.

Dr. Kevin Schully presented his poster on “Meliodosis in Takeo Province, Cambodia.” Researchers are currently working to improve sepsis survival in austere settings. The NMRC group, in conjunction with the U.S. Naval Medical Research Unit No. 2 in Cambodia and Takeo Provincial Hospital, conducted a study of sepsis; the poster detailed a number of *Burkholderia pseudomallei* infections observed during the study.

In conjunction with the festival, NICBR presented a science symposium to highlight the full spectrum of current research activities by partners which included 15 minute oral presentations from post-doctoral fellows, post-baccalaureates, technical staff, and graduate students. Lt. Luis Estrella from NMRC gave a presentation on “Isolation and Characterization of Broad Spectrum Bacteriophages with Lytic Activity in *Staphylococcus Aureus* Methicillin Resistant.” The poster expounded on bacterial virus mediated therapy to combat multidrug resistant organisms in wound infections.

In addition to the scientific sessions, the festival included booths with information on local agencies, educational opportunities, safety displays, as well as commercial exhibits of the latest scientific equipment and technologies.

# U.S. Navy, Duke University, and the National University of Singapore Conduct Joint Mosquito Study

Story by Mass Communication Specialist 1st Class Jay C. Pugh, Commander, Task Force 73 Public Affairs



*Hospital Corpsman 1st Class Harold Sylvester, assigned to Naval Medical Research Center Asia (NMRC-A), sets and baits mosquito traps in Singapore. NMRC-A is conducting research project to study the different populations of mosquitos in Singapore and their ability to transmit diseases. (U.S. Navy photo by Mass Communication Specialist 1st Class Jay C. Pugh/Released)*

SINGAPORE (NNS) -- Naval Medical Research Center Asia (NMRC-A) teamed up with the joint research institute of Duke University and the National University of Singapore Graduate Medical School (Duke- NUS) to conduct research on different populations of mosquitoes in Singapore and their ability to transmit diseases.

The partner project was initiated in January and is expected to conclude this December.

“We have a two-tiered approach with this project. Firstly, we want to help study the population genetics of local mosquitoes within the Aedes genus and potentially learn how it may influence their ability to transmit diseases such as dengue,” said Lt. Cmdr. Ian Sutherland, department head of Entomology, NMRC-A. “We also want to characterize potential ‘hot spots,’ or concentrated breeding grounds, of high mosquito populations. We’re collaborating in this research to take care of our Sailors and Marines and to ensure they stay healthy and safe.”

The study came on the heels of record breaking reported cases of Dengue fever in Singapore for 2013 and 2014.

According to statistics from the World Health Organization and the National Environment Agency (NEA) of Singapore, in 2013, approximately 22,000 cases of Dengue were reported in Singapore, surpassing the previous record of 14,000 cases in 2005. 2014 saw a decrease with approximately 18,000 reported cases, but was still well over the previous record from 2005. So far, 2015 has been better and seen about 2,000 cases. The joint-study was initiated in part to better understand the dynamics of dengue transmission in Singapore.

Dengue fever is a mosquito-borne tropical disease caused by the dengue virus. Symptoms include fever, headache, muscle and joint pains, and a characteristic skin rash that is similar to measles. Dengue is transmitted by several species of mosquito within the Aedes genus.

“Multiple species of Aedes mosquitoes can transmit the dengue virus. They can have different competencies and rates of successful transmission,” said Sutherland.

Sutherland, along with two Navy hospital corpsmen, set mosquito traps around the Sembawang area to monitor possible mosquito populations. The traps are checked two to three times a week for activity. The traps attract mosquitoes with a baited combination of carbon dioxide, heat, scent and light.

Sutherland offered advice to help reduce mosquito hotspots. The most common breeding grounds of mosquitoes come from standing water which can be found in discarded bottle caps, cans, cups, flower pots, leaves on plants, holes in trees, and even in carelessly dumped plastic bags.

It takes approximately five to seven days for mosquito larvae to mature and staying vigilant against stagnant water can significantly reduce mosquito populations. Also, the best way to keep mosquitoes from biting is to use insect repellent with the chemical diethyltoluamide, commonly referred to as DEET. DEET is designed for direct application to people’s skin to repel insects. Rather than killing insects, DEET works by making it hard for biting bugs to smell prey.

“A lot of people don’t think about mosquitoes and disease until someone close to them gets sick. That’s the perennial challenge of public health awareness,” said Sutherland. “There’s no definitive area in Singapore that breeds hotspots. The NEA and Singapore government does an excellent job of tracking existing hotspots and letting the public know.”



# Dr. Weathersby is 2014 Recipient of the Dr. Edward Cudahy Excellence in Science Award

*Story courtesy of NSMRL Public Affairs*

GROTON, Conn. - Dr. Paul Weathersby was recognized for professional achievement in the superior performance of his duties and selected as the Dr. Edward Cudahy Scientist of the Year 2014 for the Naval Submarine Medical Research Laboratory (NSMRL) at an awards ceremony, April 8.

Weathersby was the Principal Investigator on the Littoral Class Ship (LCS) project investigating the long-term performance of hearing-protective custom-molded earplugs on the LCS crew, as well as, a leading member of NSMRL's hearing conservation group.

His scientific acumen and ability to communicate, direct, and advise research personnel across these two programs were instrumental in contributing to the scientific productivity of the hearing conservation group and propelling them to author an increased number of quarterly progress reports, technical reports and peer-reviewed journal articles.

His initiative and creativity in aligning scientific and program management requirements were key attributes in the successful advocacy for securing Office of Naval Research funding for the LCS and other research efforts in 2014.

Last June Weathersby received the prestigious Albert R. Behnke Award from The Undersea and Hyperbaric Medicine Science Society.

Weathersby received this award for his outstanding advances in the undersea hyperbaric biomedical field and particularly for his pioneering work on applying probabilistic modelling



*Dr. Paul Weathersby, Principal Investigator at the Naval Submarine Medical Research Laboratory. (Photo courtesy of NSMRL Public Affairs)*

and maximum likelihood techniques to decompression table development. This latter work has direct relevance to the submariner for estimating decompression risk for escape from a disabled submarine.

Weathersby is commended for his commitment, enthusiasm, positive attitude and dedication to the mission of the lab. His contributions are admirable and serve as a benchmark and role model for others to emulate.

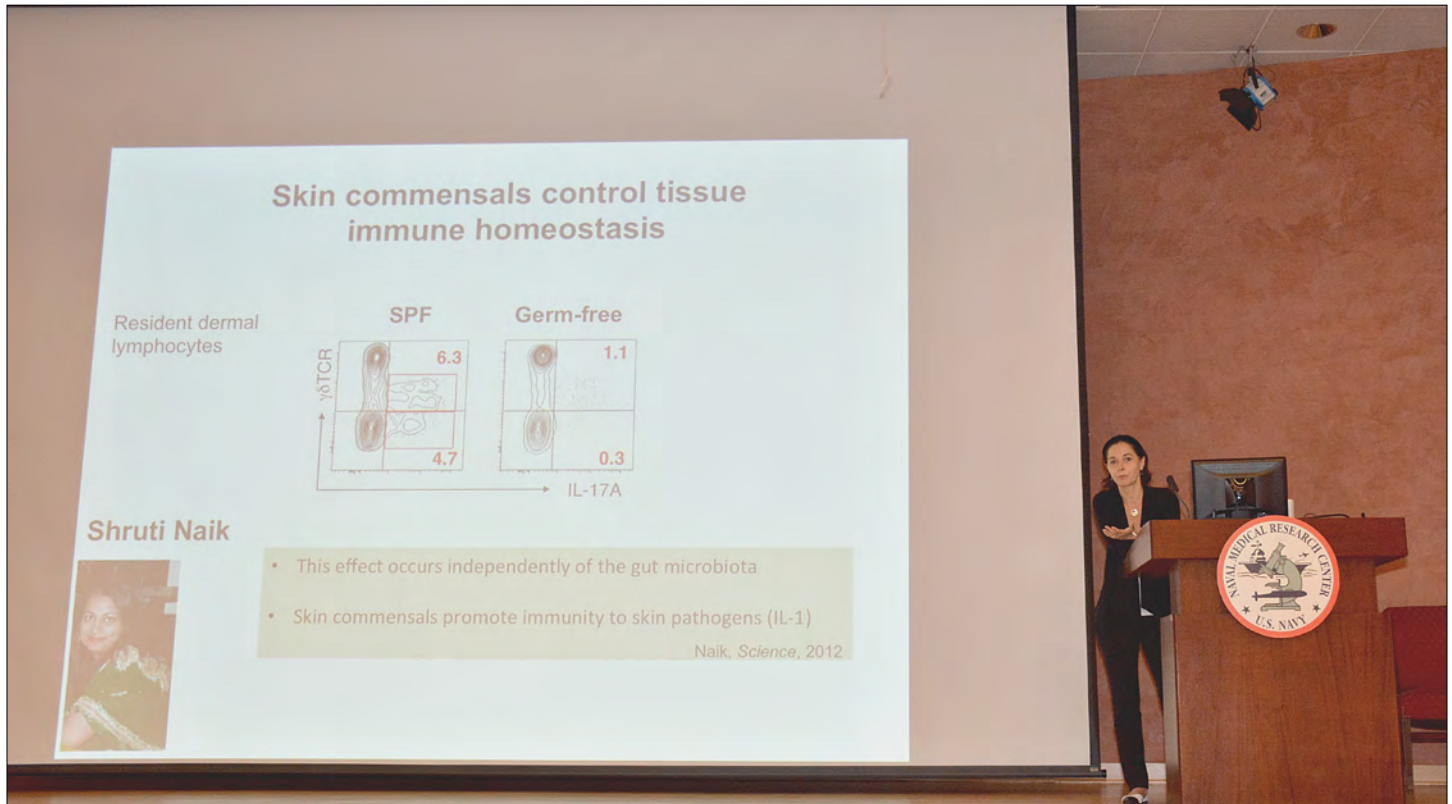
The U.S. submarine service has a long and proud tradition of developing and operating with leading edge technologies. NSMRL is a major

contributor to integrating these technologies into submarine crew operations.

The laboratory's mission is to protect the health and enhance the performance of warfighters through submarine, diving and surface biomedical research solutions. Established in World War II to conduct mission critical studies in night vision, sonar sound discrimination and personnel selection, NSMRL continues to serve the fleet by taking the lead in undersea human factors, sensory sciences and operational medicine.

# NMRC Enterics Department Holds Seminar on Pathogenic Bacteria

Story by Cmdr. Mark Riddle, Naval Medical Research Center



Dr. Yasmine Belkaid, Chief of the Mucosal Immunology section at the National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health and co-director of the trans-NIH metaorganisms initiative (NIH) gives a seminar at Naval Medical Research Center. (Photo taken by Mikelle D. Smith, Naval Medical Research Center Public Affairs)

SILVER SPRING, Md. -- Naval Medical Research Center (NMRC) Enterics Department held a seminar in the Albert R. Behnke Auditorium, June 5.

Dr. Yasmine Belkaid, Chief of the Mucosal Immunology section at the National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health and co-director of the trans-NIH metaorganisms initiative (NIH) returned to NMRC for a second appearance in two years.

Belkaid leads a broad research program to understand the mechanisms controlling infection at barrier sites such as the skin and the gut. These two sites represent the first portal of pathogen exposure and are major anatomical sites for development of inflammatory disorders.

During the seminar, Belkaid discussed

their latest work understanding the interaction of commensal (non-pathogenic) bacteria of the skin with control of the human immune system and colonization by pathogenic bacteria. In addition, a new model describing infection of *Yersinia pseudotuberculosis* in mice (a similar type of infection exists in humans) and potential mechanisms underlying chronic bowel disease was presented revealing novel insights into the way these infections might have long lasting consequences.

Military service members are at increased risk of developing acute infections of the gut during deployment, and studies continue to be reported which link chronic gastrointestinal and joint problems after these infections.

An emerging concept is that like post-traumatic stress disorder, unique exposures

and individual genetic and immunological factors may combine to cause important chronic disease to our troops. Interestingly, just last month another study was published (Pimentel et al. PLoS One May 13, 2015) which provided new evidence linking *Campylobacter* and irritable bowel syndrome.

The work by Belkaid and others is seen as critically important to better understand the fundamental factors which might be involved in chronic consequences of gastrointestinal infection so that better treatment and prevention strategies might be found.

The Enteric Diseases Department's efforts and strategy of development of vaccines against *Campylobacter* and other common infections may play an ever increasing role in keeping our troops safe both during deployment and when they return.



# Navy Researcher Talks to Second Graders about Science

Story by Doris Ryan, Naval Medical Research Center Public Affairs



Lt. Cmdr. Maya Williams was the guest speaker at Kemp Mill Elementary School Science Day. (Photo courtesy of Lt. Cmdr. Maya Williams)

SILVER SPRING, Md. – A Naval Medical Research Center (NMRC) microbiologist stepped into the classroom to talk science to elementary school students. Lt. Cmdr. Maya Williams, head of the Viral and Rickettsial Diseases Department at NMRC, was the guest speaker for second graders participating in Science Day at the Kemp Mill Elementary School in Silver Spring, Maryland, May 28.

“I had the chance to speak to four groups of second graders and teach them

about the scientific method through a basic microbiology experiment,” said Williams. “I also talked about my work as a microbiologist in the Navy.”

During the Kemp Mill Elementary School Science Day, each class and grade level rotated through multiple science-themed stations and the presenter led an activity or lesson in their field. Williams was the guest speaker for the event.

“The students were delightful, it was just a wonderful time to spend the afternoon with them, they were genuinely curious about science,” said Williams. “STEM (Science, Technology Engineering and Math) programs are so important to introduce science and generate continued interest in the field. It is outstanding that this elementary school takes this program seriously and invites people working in various fields of science to share their experiences with the students.”

NMRC hosts a summer STEM program that includes high school and college students, hopefully I will see some of these students in the years to come, Williams added.

NMRC’s Viral and Rickettsial Diseases Department’s primary focus is on the development of vaccines and field-deployable diagnostic assays for the rapid and accurate detection of dengue fever and scrub typhus as well as other infectious diseases.

Naval Medical Research Center would like to wish the  
United States Army  
Happy 240th Birthday.



GRAPHIC ILLUSTRATION BY MIKELLE D. SMITH, NAVAL MEDICAL RESEARCH CENTER PUBLIC AFFAIRS